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10/565,426	01/18/2006	David Richard Hallam	CAF-206-A	7386

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EXAMINER	
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ART UNIT	PAPER NUMBER
1723	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/565,426	HALLAM, DAVID RICHARD	
	Examiner	Art Unit	
	BRYAN D. RIPA	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-4 and 6-22* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-4 and 6-22* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received on June 29, 2011:

- claims 1-4 and 6-22 are presently pending
- the rejection of claims 1-4 and 6-17 under 35 U.S.C. 112, second paragraph, is withdrawn
- all prior art rejections are withdrawn in light of the amendments to the claims
- new grounds of rejection are presented below
- claim 11 is indicated as containing allowable subject matter

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claim 21 requires a surge protected

transformer for power the motor; however, the motor recited in independent claim 18 is the motor of the fan (see claim 18 line 4).

While the specification does disclose the use of a surge protected transformer for powering the ozone generator (see Specification at ¶16), the Examiner has been unable to locate any disclosure within the specification that would support the limitation as presently set forth.

Please note, due to the fact that the recitation of claim 21 is presumably meant to be referring to the transformer providing power to the ozone generator unit as disclosed in the specification, the Examiner will be interpreting the claim in that light since that appears to be most consistent with Applicant's intended meaning.

3. Claims 1-4 and 6-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 1 contains a limitation requiring the ozone concentration in the cleaned air expelled from the apparatus to be “at a physiologically acceptable level” (see claim 1 lines 12-13). However, it is unclear what concentration or level of ozone is being required by the limitation. As disclosed by the Applicant, different countries have differing limits on what constitutes acceptable levels of exposure (see Specification at page 13 lines 11-17) and the exposure levels are also known to vary depending on the length of time of exposure (see Specification at page 1 lines 24-28).

As a result, the limitation requiring the concentration of ozone in the air expelled by the device to be at a "physiologically acceptable level" is unclear.

4. Additionally, the Examiner wishes to make note of the reason why the earlier grounds of rejection under 35 U.S.C. 112, second paragraph, as to the use of the phrase "ozone decomposition catalyzer" in the claims is being withdrawn. Upon further consideration, the Examiner is of the opinion that in light of the specification the use of phrase by the Applicant is intended to preclude the use of a special catalyst or device such as disclosed in Applicant's specification (see Specification at page 10 lines 1-13 teaching the use of oxidisable substrates, solid surfaces or specific catalysts in which the disclosed invention acts to "obviate the need for the use of special catalysts").

As a result, it is clear the Applicant intends to preclude the use of a specific device or structure that acts to decompose the ozone by acting as a "special catalyst" by catalyzing the decomposition of ozone as discussed. Moreover, one of ordinary skill in the art looking at the specification as a whole would have understood the claimed phrase to be precluding the use of these types of devices in the apparatus as claimed.

Please note, in terms of claim interpretation for examination purposes the Examiner will be interpreting the claim limitation requiring there to be no use of an ozone decomposition catalyzer as precluding the use of a special catalyst or device for increasing the rate of decomposition of the ozone which is used to treat the air before being expelled from the apparatus.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-3, 12-14, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al., (U.S. Pat. No. 4,049,400) (hereinafter referred to as "BENNETT") in view of HALLAM et al., (G.B. Pat. No. 2358350) (hereinafter referred to as "HALLAM").

Regarding claims 1 and 3, BENNETT teaches an apparatus for the treatment of air (see generally col. 1 lines 5-7), comprising a low power alternating current corona discharge ozone generator mounted inside a chamber (see col. 2 lines 2-8 teaching the air purifier having an ozone generator inside; see also col. 4 lines 6-10 teaching the voltage applied between the electrodes so as to produce the low power corona discharge and in which a typical 110-120 line voltage is used, i.e. 120 V AC power supply; see also housing base 13, cover 16, housing top 28 and housing bottom 29 in figure 1 acting to define the chamber), the chamber being defined by an earth casing comprising a metal or a plastics material impregnated with or coated with a metallic material (see col. 4 lines 16-18 teaching the casing made of aluminum; see also figure 5 and col. 4 lines 21-23 teaching cover 16, housing base 13, housing top 28 and housing bottom 29 being grounded) and having an air inlet and an air outlet and at least one air flow impeller formed and arranged for inducing a flow of air through the chamber from

inlet to outlet in a non-rectilinear path (see figure 1 depicting housing top and housing bottom having perforations for moving air in and out of the device; see also col. 3 lines 62-68 teaching the use of a fan and elongated opening 95 such that the flow of air through the chamber would have a non-rectilinear path), the ozone generator being formed and arranged for generating a restricted concentration of ozone and any other reactive species formed together therewith within an inactivation zone contained within the chamber through which the air flow is passed in the use of the apparatus (see col. 4 lines 24-40 teaching the operation of the device so as to generator a desired amount of ozone and pass the air flow though the device), which restricted concentration is sufficient effectively to inactivate airborne pollutant material entrained in the air flow, yet which restricted concentration decays sufficiently outside the inactivating zone so that the concentration of ozone in the cleaned air expelled from the apparatus is at a physiologically acceptable level without the use of an ozone decomposition catalyzer (see figure 1 teaching no use of an ozone decomposition catalyzer; see also col. 4 lines 16-18 teaching the casing made of aluminum; see also figure 5 and col. 4 lines 21-23 teaching cover 16, housing base 13, housing top 28 and housing bottom 29 being grounded which is being presumed to function as claimed).

BENNETT fails to explicitly teach the power rating of the ozone generator in the range of 4 watts to 50 watts and, also, does not teach the low power corona discharge device comprising concentric tubular metal gauze electrodes separated by a tubular strengthened glass dielectric.

However, HALLAM teaches the use of a low power corona discharge device for the generation of ozone comprising concentric tubular metal gauze electrodes and separated by a tubular strengthened glass dielectric (see page 3 discussing corona unit 19 comprising a quartz glass sandwiched between two stainless steel mesh electrodes which would provide for some amount of strengthening to the glass dielectric) wherein the power rating of the low power corona discharge ozone generator is approximately 36 watts (see page 3 teaching the operating current being 9 mA at 4 kV).

As shown by HALLAM, a person of ordinary skill in the art would accordingly have recognized the use of a tubular corona discharge device to facilitate creating an electric field for the generation of ozone and ions.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the ozone generator of BENNETT with the discharge unit of HALLAM to obtain the predictable result of having a low power corona discharge device having concentric tubular metal gauze electrodes separated by a tubular strengthened glass dielectric that has a power rating as claimed.

Regarding claim 2, BENNETT teaches the apparatus wherein the low power corona discharge ozone generator comprises a low power corona discharge device provided with a low power high voltage output transformer (see transformer 14; see also

discussion BENNETT at col. 3 line 68-col. 4 line 6 teaching the transformer capable of supplying a voltage to the electrodes of between 3.8 and 5.2 kV which encompasses the operating conditions disclosed for the potential of the electrodes in the device of HALLAM at page 3 typically operating with a 4 kV applied to the electrodes).

Regarding claim 12, BENNETT teaches the apparatus wherein is used for the alternating current corona discharge ozone generator an AC supply with a frequency in the range from 50 to 1,000 Hz (see col. 4 lines 6-10 teaching the voltage applied between the electrodes so as to produce the low power corona discharge and in which a typical 110-120 line voltage is used, i.e. 120 V AC power supply with a frequency of 60 Hz).

Regarding claim 13, HALLAM teaches the low power corona discharge ozone generator wherein an AC supply is used with an operating voltage in the range from 1 to 6 kV (see page 3 teaching the potential between the electrodes being 4 kV).

Regarding claim 14, HALLAM teaches the low power corona discharge ozone generator wherein an AC supply providing a starting current in the range from 1 to 10 mA (see page 3 teaching the operating current being 9 mA).

Regarding claim 16, HALLAM teaches the apparatus wherein is used a lower power corona discharge device with a solid dielectric (see HALLAM at page 3 teaching the use of a quartz glass dielectric).

Regarding claim 17, BENNETT as modified by HALLAM teaches a method of cleaning air (see discussion above with respect to the rejection of claim 1 under BENNETT), comprising the steps of:

- providing an apparatus of claim 1 (see the discussion above with respect to the rejection of claim 1 under BENNETT);
- powering the ozone generator of said apparatus so as to generate ozone in the inactivation zone of the apparatus (see col. 4 lines 24-33 teaching the powering of the ozone generator having a chamber as defined above in which a portion of the inside of the chamber having the ozone generator is the inactivation zone); and
- operating said airflow impeller so as to pass a flow of the air through the inactivation zone (see col. 3 lines 62-64 teaching the use of a fan); and
- exhausting the air from the inactivation zone through a catalyst-free decomposing zone in the chamber (see figure 1 depicting a portion of the air purifying unit near housing top 28 that is outside the inactivation zone to be considered the decomposing zone in which there is no ozone decomposition catalyst material in which to decompose the ozone before the air is expelled).

Regarding claim 18, BENNETT teaches an ozone-based device for treating pollutants in air (see generally col. 1 lines 5-7), comprising:

- a grounded, conductive, enclosed chamber having an air inlet and an air outlet arranged to produce air flow therebetween (see col. 4 lines 16-18 teaching the casing made of aluminum; see also figure 5 and col. 4 lines 21-23 teaching cover 16, housing base 13, housing top 28 and housing bottom 29 being grounded; see also figure 1 depicting housing top and housing bottom having perforations for moving air in and out of the device);
- an impeller having a motor for producing the flow (see col. 3 lines 62-68 teaching the use of a fan which would inherently possess a motor);
- an inactivating zone within the chamber proximate the inlet (see figure 1 including lower portion of the air purifier 10 such that the grid assembly 18 that includes the ozone generator is included in the region defined);
- a low power ozone generator within the inactivating zone and in the flow (see grid assembly 18); and
- a catalyst-free decomposing zone within the chamber proximate the outlet (see figure 1 including the upper portion within air purifier 10);
- the chamber being arranged to move air from the inlet through the inactivating zone and the decomposing zone in a turbulent, non-straight line flow whereby the ozone concentration in the air expelled from the chamber is less than about 0.3 ppm (see elongated opening 95 such that the flow of air through the chamber would have a non-rectilinear path; see also col. 4 lines 16-18 teaching the casing

made of aluminum; see also figure 5 and col. 4 lines 21-23 teaching cover 16, housing base 13, housing top 28 and housing bottom 29 being grounded which is being presumed to function as claimed so as to cause the ozone concentration to naturally decompose as claimed).

BENNETT fails to explicitly teach the power rating of the ozone generator in the range of 4 watts to 50 watts.

However, HALLAM teaches the use of a low power corona discharge device for the generation of ozone comprising concentric tubular metal gauze electrodes and separated by a tubular strengthened glass dielectric (see page 3 discussing corona unit 19 comprising a quartz glass sandwiched between two stainless steel mesh electrodes which would provide for some amount of strengthening to the glass dielectric) wherein the power rating of the low power corona discharge ozone generator is approximately 36 watts (see page 3 teaching the operating current being 9 mA at 4 kV).

As shown by HALLAM, a person of ordinary skill in the art would accordingly have recognized the use of a tubular corona discharge device to facilitate creating an electric field for the generation of ozone and ions.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the ozone generator of BENNETT with the discharge unit of HALLAM to obtain the predictable result of having a low power corona discharge

device having concentric tubular metal gauze electrodes separated by a tubular strengthened glass dielectric that has a power rating as claimed.

Regarding claim 21, BENNET teaches the device further including a surge protected transformer for powering the ozone generator (see figure 5 depicting fuse 36).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over BENNETT in view of HALLAM as applied to claims 1-3 above and further in view of the English abstract of J.P. 51103095 (hereinafter referred to as “NIPPON”) and Fovell et al., (U.S. Pat. No. 4,960,569) (hereinafter referred to as "FOVELL").

Regarding claim 4, BENNETT as modified by HALLAM does not teach the glass dielectric being of titanium oxide strengthened borosilicate glass. Rather, HALLAM teaches the dielectric being quartz glass (see page 3).

However, NIPPON teaches the use of a glass dielectric having titanium dioxide added in an ozone generator (see abstract). Furthermore, while NIPPON is silent as to the exact type of glass that is used having titanium dioxide added, FOVELL teaches that the use of borosilicate glass in a concentric tubular corona discharge device for the creation of ozone was known in the art (see col. 2 lines 58-60).

As a result, one of ordinary skill in the art would have appreciated and understood the term glass as taught by NIPPON to include those types of glasses

normally used as a dielectric in ozone generators which would have included borosilicate glass as taught by FOVELL.

Consequently, as shown by NIPPON and FOVELL, a person of ordinary skill in the art would accordingly have recognized the use of a titanium dioxide strengthened borosilicate glass as the dielectric for use in a corona discharge device.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide for the use of a borosilicate glass dielectric as taught by FOVELL with titanium dioxide as taught by NIPPON in the ozone generator of HALLAM as claimed.

7. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over BENNETT in view of HALLAM as applied to the rejection of claim 1 above.

Regarding claims 6 and 15, BENNETT as modified by HALLAM is silent with respect to the residence time and flow rate of the air to be treated.

However, one of ordinary skill in the art would have recognized the flow rate of air through the apparatus and the residence time of the air to be treated in the chamber to be variables that would impact the effectives or level of purification that results from the air purifying device. If the residence time is too low, the air will pass through the air

purifier without have been sufficiently treated; however, on the other hand if the residence time is too high time and energy will be wasted. As such, the flow rate of air through the device must be optimized in light of the size of the air purifier so as to provide for an optimal air flow rate which achieves the desired residence time without either under treating or over treating the air as it passes through the purification device. See MPEP §2144.05 (II)(B).

As a result, one of ordinary skill in the art would have been motivated to provide for a flow rate of air through the apparatus in the range of 50 to 2500 m^3/hr as well as others and a residence time of 0.2 to 20 seconds in the chamber of the apparatus in order to find optimum working conditions that maximize the flow rate of air, thereby decreasing the residence time, while still allowing sufficient time for air purification.

8. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over BENNETT in view of HALLAM as applied to claim 1 above and further in view of Yikai et al., (U.S. Pat. No. 5,055,115) (hereinafter referred to as "YIKAI").

Regarding claims 7 and 9, BENNETT as modified by HALLAM does not teach the inlet or the outlet being fitted with at least one filter.

However, YIKAI teaches the apparatus for the treatment of air wherein the inlet is fitted with at least one filter (see filter 56; col. 3 lines 55-58; see also figure 2) and wherein the outlet is fitted with at least one filter (see fins 7; col. 2 lines 46-48 stating air outlet 6 having a number of fins which would act as a filter).

Moreover, one of ordinary skill in the art would have appreciated that the use of inlet and outlet filters would help to further clean the air and provide additional cleaning benefits by providing for the removal of dust and other particulates from the air while also ensuring these particulates do not enter the apparatus causing unwanted buildup.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include inlet and outlet filters on the air cleaner of BENNETT as taught by YIKAI.

Regarding claim 8, YIKAI teaches the apparatus for the treatment of air wherein is provided at least one filter for removing tobacco smoke (see filter 56; col. 3 lines 55-58; see also figure 2 which is capable of acting to remove at least some tobacco smoke).

Please note, the limitation requiring the filter "for removing tobacco smoke" is being interpreted by the Examiner as a statement of intended use that do not act to positively recite any structural limitations of the device (see MPEP §2106(II) and §2111.04). As a result, the prior art need only be capable of performing the recited function in order to read on the claim limitation.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over BENNETT in view of HALLAM and YIKAI as applied to claim 1 above and further in view Taylor et al., (U.S. Pub. No. 2004/0140194) (hereinafter referred to as "TAYLOR")

with evidence from Kelly et al., (U.S. Pub. No. 2004/0184972) (hereinafter referred to as "KELLY").

Regarding claim 10, while YIKAI teaches the apparatus for the treatment of air having a filter, YIKAI is silent as to the specifics of the filter and so does not teach the filter being an electrostatic filter as claimed.

However, TAYLOR teaches an air purifying device having a pre-filter and a post-filter (figure 1 depicting pre-filter 14 and HEPA filter 29; see also ¶40), in which the post-filter is a HEPA filter, i.e. an electrostatic filter (see ¶40 teaching filter 29 being a HEPA filter).

Moreover, as evidenced by KELLY, it is known in the art that the use of a HEPA filter results in the removal of 99% of particles having a diameter of 0.3 micrometers (see ¶19). As such, one of ordinary skill in the art would have been motivated to employ a HEPA filter in an air purifying device in order to remove particles from the air being treated.

The use of a known technique to improve similar devices (methods or products) in the same way is likely to be obvious. See *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, C.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a HEPA filter in the air purifier of BENNETT as taught by TAYLOR in order to achieve the predictable result of greater removal or air borne particles.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over BENNETT in view of HALLAM as applied to claim 18 above, and further in view of TAYLOR with evidence from KELLY.

Regarding claim 19, BENNETT in view of HALLAM fails to explicitly teach an electrostatic post filter arranged proximate the outlet to receive and treat air from the decomposing zone.

However, TAYLOR teaches an air purifying device having an electrostatic post-filter (figure 1 depicting HEPA filter 29; see also ¶40), in which the post-filter is a HEPA filter, i.e. an electrostatic filter (see ¶40 teaching filter 29 being a HEPA filter).

Moreover, as evidenced by KELLY, it is known in the art that the use of a HEPA filter results in the removal of 99% of particles having a diameter of 0.3 micrometers (see ¶19). As such, one of ordinary skill in the art would have been motivated to employ a HEPA filter in an air purifying device in order to remove particles from the air being treated prior to the air exiting the device.

The use of a known technique to improve similar devices (methods or products) in the same way is likely to be obvious. See *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, C.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a HEPA filter in the air purifier of BENNETT as taught by TAYLOR in order to achieve the predictable result of greater removal or air borne particles.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over BENNETT in view of HALLAM and TAYLOR with evidence from KELLY as applied to claims 18 and 19 above, and further in view of FOVELL.

Regarding claim 20, BENNETT in view of HALLAM and TAYLOR as set forth above teaches the ozone generator being of a tubular design with stainless steel electrodes on opposite sides of the dielectric glass (see HALLAM at page 3 teaching the corona unit being of a tubular design and having stainless steel mesh electrodes on opposite sides of the glass dielectric), the references fail to explicitly teach the glass being a borosilicate glass.

However, as set forth previously, FOVELL teaches that the use of borosilicate glass in a concentric tubular corona discharge device for the creation of ozone was known in the art (see col. 2 lines 58-60).

Consequently, as shown by FOVELL, a person of ordinary skill in the art would accordingly have recognized the use of borosilicate glass as the dielectric for use in a corona discharge device.

The simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1395–97 (2007) (see MPEP § 2143, B.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide for the use of a borosilicate glass dielectric as taught by FOVELL in the ozone generator of HALLAM as claimed.

Allowable Subject Matter

12. Claim 11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. While the prior art discloses air purifiers having a pre-filter (U.S. Pub. No. 2003/0155228 to Mills et al. at figure 1) or a post-filter (KELLY at figure 1) or both a pre-filter and a post-filter (see TAYLOR at figure 1), the prior art does not teach an air purifier employing the use of a pre-filter and a post-filter in which the inlet and outlets are disposed in close proximity to each other and in which a single filter mounting having a single filter is attached such that respective different portions of the filter cover the inlet and the outlet as claimed.

Response to Arguments

13. Applicant's arguments with respect to claims 1-4 and 6-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN D. RIPA whose telephone number is (571)270-7875. The examiner can normally be reached on Monday to Friday, 9:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/
Primary Examiner, Art Unit 1723

/B. D. R./
Examiner, Art Unit 1723